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(71) Applicant
Ericsson Ge Mobile Communications Inc

(Incorporated in the USA - Delaware)

1 Triangle Drive, Research Triangle Park, NC 27709, United States of America

(72) Inventor
Paul Wilkinson Dent

(74) Agent and/or Address for Service
Haseltine Lake & Co
Hazlitt House, 28 Southampton Buildings, Chancery Lane, London, WC2A 1AT, United Kingdom

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(56) Documents cited by ISA
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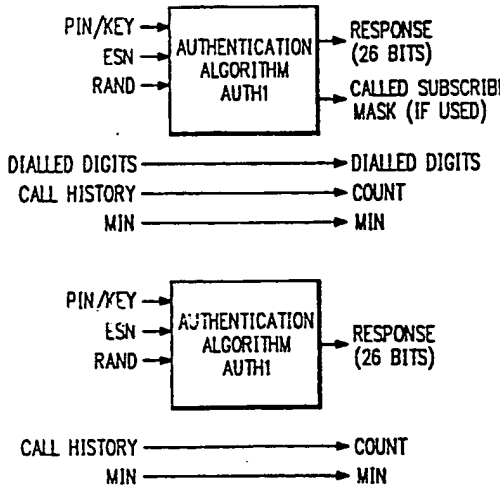
US 4549308 A

(58) Field of search by ISA
US CL. 380/21,23,28,43,44,46,47,48,49,50, 455/33, 375/107,110,112. 370/103,105,107, 379/59,60.

(54) Authentication system for digital cellular communications

(57) A system for the authentication of mobile stations and base stations in a cellular communications network. The system includes an algorithm which generates not only a key dependent response to a random challenge, but also a temporary conversation key or call variable which may be used to encipher traffic in the network. To protect against clones in the network, the algorithm uses a rolling key which contains historical information. A bilateral authentication procedure may be used to update the rolling key and to generate a new conversation key.



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(71) Applicant(s)
Motorola Inc

(Incorporated in USA - Delaware)

Corporate Offices, 1303 East Algonquin Road, Schaumburg, Illinois 60196, United States of America

(72) Inventor(s)
Jennifer Ann Pierce
Louis David Finkelstein
Peter B Brown
Jay R Krebs

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H04L 9/32 9/16 9/22

(52) UK CL (Edition O)
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(58) Field of Search by ISA
INT CL[6] H04L 9/16 9/22 9/32
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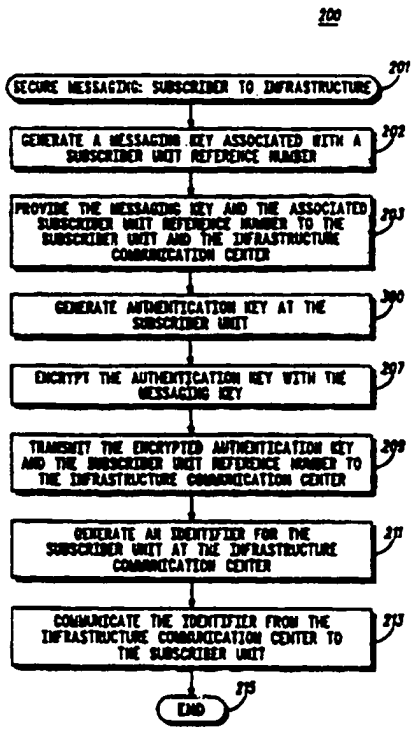
(74) Agent and/or Address for Service
Sarah J Spaulding
Motorola Limited, European Intellectual Property Operation, Midpoint, Alencon Link, BASINGSTOKE, Hampshire, RG21 7PL, United Kingdom

(54) **A method of messaging in a communciation system**

(57) A communication system (100) employs a method of messaging between a subscriber unit (105) and an infrastructure communication center (101). A messaging key associated with a subscriber unit reference number is provided (203, 403) to the subscriber unit (105) and to the infrastructure communication center (101). An authentication key and/or an identifier for the subscriber unit (105) is then produced (300, 407) by either the subscriber unit (105) or the infrastructure communication center (101). The authentication key and/or the identifier is encrypted (207, 413) with the messaging key and is subsequently communicated (209, 415) between the subscriber unit (105) and the infrastructure communication center (101).



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